

**THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

UNILOC USA, INC., et al.

v.

SAMSUNG ELECTRONICS AMERICA,
INC., et al.

§
§
§
§
§
§

CASE NO. 2:17-CV-651-JRG

CLAIM CONSTRUCTION
MEMORANDUM AND ORDER

Before the Court is the Opening Claim Construction Brief (Dkt. No. 48) filed by Plaintiffs Uniloc USA, Inc. and Uniloc Luxembourg, S.A. (“Plaintiffs” or “Uniloc”). Also before the Court are Defendants Samsung Electronics America, Inc. and Samsung Electronics Co., Ltd.’s (“Defendants” or “Samsung”) Responsive Claim Construction Brief (Dkt. No. 55) and Plaintiffs’ Reply Brief (Dkt. No. 62).

The Court held a claim construction hearing on October 16, 2018.

Table of Contents

I. BACKGROUND.....	3
II. LEGAL PRINCIPLES	3
III. AGREED TERMS.....	7
IV. DISPUTED TERMS.....	7
A. “motion”	8
B. “vertical travel up/down portion of the step”	11
C. “identifying a vertical travel up portion of the step” and “identifying a vertical travel down portion of the step”	14
D. “computing a difference between the vertical travel up portion and the vertical travel down portion of the step”	16
E. “incline of a/the surface”	18
F. “calculation of an incline of a/the surface”	19
G. “incline data”	21
H. “user step data” and “step data”	23
I. “step calculation logic to utilize the motion detected by the accelerometer to detect and count steps”	25
J. “incline logic to utilize the motion detected by the accelerometer/motion detection apparatus to make a calculation of an incline of a/the surface” and “the incline logic to utilize the change in altitude to make an additional calculation of the incline of the surface, and to verify the calculation of the incline using the additional calculation of the incline”	32
K. “energy calculation logic to calculate a calorie expenditure of the user”	39
V. CONCLUSION.....	42

I. BACKGROUND

Plaintiffs bring suit alleging infringement of United States Patent No. 7,690,556 (“the ’556 Patent”). (See Dkt. No. 1, Ex. A.) The ’556 Patent, titled “Step Counter Accounting for Incline,” issued on April 6, 2010, and bears a filing date of January 26, 2007. The Abstract of the ’556 Patent states:

A method and apparatus for a step counter system is described. The step counter system comprises an accelerometer to detect motion of a user, a step calculation logic to utilize the motion detected by the accelerometer to detect and count steps, and an incline logic to calculate an incline of a surface on which the user moved.

II. LEGAL PRINCIPLES

It is understood that “[a] claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention.” *Burke, Inc. v. Bruno Indep. Living Aids, Inc.*, 183 F.3d 1334, 1340 (Fed. Cir. 1999). Claim construction is clearly an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970–71 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996).

“In some cases, however, the district court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period.” *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015) (citation omitted). “In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the ‘evidentiary underpinnings’ of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal.” *Id.* (citing 517 U.S. 370).

To ascertain the meaning of claims, courts look to three primary sources: the claims, the specification, and the prosecution history. *Markman*, 52 F.3d at 979. The specification must

contain a written description of the invention that enables one of ordinary skill in the art to make and use the invention. *Id.* A patent's claims must be read in view of the specification, of which they are a part. *Id.* For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims. *Id.* "One purpose for examining the specification is to determine if the patentee has limited the scope of the claims." *Watts v. XL Sys., Inc.*, 232 F.3d 877, 882 (Fed. Cir. 2000).

Nonetheless, it is the function of the claims, not the specification, to set forth the limits of the patentee's invention. Otherwise, there would be no need for claims. *SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc). The patentee is free to be his own lexicographer, but any special definition given to a word must be clearly set forth in the specification. *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1388 (Fed. Cir. 1992). Although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than the embodiments. *Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994).

This Court's claim construction analysis is substantially guided by the Federal Circuit's decision in *Phillips v. AWH Corporation*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). In *Phillips*, the court set forth several guideposts that courts should follow when construing claims. In particular, the court reiterated that "the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Id.* at 1312 (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To that end, the words used in a claim are generally given their ordinary and customary meaning. *Id.* The ordinary and customary meaning of a claim term "is the meaning that the term would have to a person of ordinary skill in

the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1313. This principle of patent law flows naturally from the recognition that inventors are usually persons who are skilled in the field of the invention and that patents are addressed to, and intended to be read by, others skilled in the particular art. *Id.*

Despite the importance of claim terms, *Phillips* made clear that “the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* Although the claims themselves may provide guidance as to the meaning of particular terms, those terms are part of “a fully integrated written instrument.” *Id.* at 1315 (quoting *Markman*, 52 F.3d at 978). Thus, the *Phillips* court emphasized the specification as being the primary basis for construing the claims. *Id.* at 1314–17. As the Supreme Court stated long ago, “in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the specification to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims.” *Bates v. Coe*, 98 U.S. 31, 38 (1878). In addressing the role of the specification, the *Phillips* court quoted with approval its earlier observations from *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998):

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.

Phillips, 415 F.3d at 1316. Consequently, *Phillips* emphasized the important role the specification plays in the claim construction process.

The prosecution history also continues to play an important role in claim interpretation. Like the specification, the prosecution history helps to demonstrate how the inventor and the

United States Patent and Trademark Office (“PTO”) understood the patent. *Id.* at 1317. Because the file history, however, “represents an ongoing negotiation between the PTO and the applicant,” it may lack the clarity of the specification and thus be less useful in claim construction proceedings. *Id.* Nevertheless, the prosecution history is intrinsic evidence that is relevant to the determination of how the inventor understood the invention and whether the inventor limited the invention during prosecution by narrowing the scope of the claims. *Id.*; see *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) (noting that “a patentee’s statements during prosecution, whether relied on by the examiner or not, are relevant to claim interpretation”).

Phillips rejected any claim construction approach that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions or expert testimony. The *en banc* court condemned the suggestion made by *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002), that a court should discern the ordinary meaning of the claim terms (through dictionaries or otherwise) before resorting to the specification for certain limited purposes. *Phillips*, 415 F.3d at 1319–24. According to *Phillips*, reliance on dictionary definitions at the expense of the specification had the effect of “focus[ing] the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent.” *Id.* at 1321. *Phillips* emphasized that the patent system is based on the proposition that the claims cover only the invented subject matter. *Id.*

Phillips does not preclude all uses of dictionaries in claim construction proceedings. Instead, the court assigned dictionaries a role subordinate to the intrinsic record. In doing so, the court emphasized that claim construction issues are not resolved by any magic formula. The court did not impose any particular sequence of steps for a court to follow when it considers disputed claim language. *Id.* at 1323–25. Rather, *Phillips* held that a court must attach the appropriate

weight to the intrinsic sources offered in support of a proposed claim construction, bearing in mind the general rule that the claims measure the scope of the patent grant.

The Supreme Court of the United States has “read [35 U.S.C.] § 112, ¶ 2 to require that a patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 134 S. Ct. 2120, 2129 (2014). “A determination of claim indefiniteness is a legal conclusion that is drawn from the court’s performance of its duty as the construer of patent claims.” *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005) (citations and internal quotation marks omitted), *abrogated on other grounds by Nautilus*, 134 S. Ct. 2120. “Indefiniteness must be proven by clear and convincing evidence.” *Sonix Tech. Co. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

III. AGREED TERMS

“The parties have not reached an agreement as to the construction of any claim terms/phrases.” (Dkt. No. 45 at 1.)

IV. DISPUTED TERMS

As a threshold matter, Defendants have cited testimony of named inventor Philippe Kahn; however, such testimony is of minimal weight and does not affect the Court’s analysis in these claim construction proceedings. *See Howmedica Osteonics Corp. v. Wright Med. Tech., Inc.*, 540 F.3d 1337, 1346–47 (Fed. Cir. 2008) (noting that inventor testimony is “limited by the fact that an inventor understands the invention but may not understand the claims, which are typically drafted by the attorney prosecuting the patent application”).

A. “motion”

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning	“data reflecting movement of the user”

(Dkt. No. 45, Ex. A at 4; Dkt. No. 55 at 5; Dkt. No. 64, Ex. B at 5.) The parties submit that this term appears in Claims 1, 9, and 17. (Dkt. No. 64, Ex. B at 5.)

(1) The Parties’ Positions

Plaintiffs submit that “Uniloc disagrees construction is needed” and “Uniloc suggests the Court simply instruct the jury to give the term[] [its] ordinary meaning.” (Dkt. No. 48 at 3.) Plaintiffs also argue: “This is a commonly understood word that simply needs no definition. And yet, Samsung in essence proposes to substitute it with the word ‘movement,’ or more confusingly ‘data reflecting movement of the user.’” (*Id.* at 5.)

Defendants respond that “[i]n order for the claimed invention to utilize the ‘motion’ detected by the accelerometer, the motion must be ‘data’ – specifically, ‘accelerometer data.’” (Dkt. No. 55 at 5.)

Plaintiffs reply that “[t]here is no ‘accelerometer’ in independent claim 9.” (Dkt. No. 62 at 1.) Plaintiffs also submit that “the specification sets forth at least 5 different embodiments for determining incline” (*Id.* at 2.)

(2) Analysis

Claim 1 of the ’556 Patent, for example, recites (emphasis added):

1. A step counter system comprising:
 - an accelerometer to detect *motion* of a user;
 - a step calculation logic to utilize the *motion* detected by the accelerometer to detect and count steps; and
 - an incline logic to utilize the *motion* detected by the accelerometer to make a calculation of an incline of a surface on which the user moved for one or more of the steps, wherein the calculation is performed for a step based on identifying a vertical travel up portion of the step, identifying a vertical travel down portion of

the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step.

Claim 17 similarly recites “receiving data from an accelerometer, the data indicating a motion of a user in three dimensions.” Defendants have argued that the same construction of “motion” should be applied to all claims. *See Callicrate v. Wadsworth Mfg., Inc.*, 427 F.3d 1361, 1371 (Fed. Cir. 2005) (“Of course, this court interprets claim terms consistently throughout various claims of the same patent.”).

Claim 9, by contrast, recites “a motion detection apparatus” rather than an accelerometer. Plaintiffs have also argued claim differentiation as to Claim 10, which depends from Claim 9 and which explicitly recites “the motion detection apparatus is an accelerometer, and the accelerometer data is used to calculate the incline of the surface.” *See Phillips*, 415 F.3d at 1315 (“[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim”). Further, the specification discloses that an altimeter may be used and may indicate a change in altitude. *See* ’556 Patent at 3:19–27. To whatever extent Defendants are proposing that “motion” is necessarily detected by an accelerometer, no such limitation is apparent as to the term “motion.”

Defendants have argued that “motion” must be data because it is utilized by the “step calculation logic” and “incline logic” in above-reproduced Claim 1. Nonetheless, a fair reading of the recital of “an accelerometer to detect *motion of a user*” is that the accelerometer detects just that, “motion of a user,” not data of a user. *See id.* at 4:29–31 (“[T]he user’s motion may be detected by two two-axis accelerometers, or another detection mechanism which provides motion data”). Even assuming that the recited “logic” necessarily uses data, the fact that such data may describe “motion” does not mean that the “motion” itself is data. Instead, the specification discloses that motion data arises from detecting motion. *See id.*; *see also id.* at 3:5–6 (“The

accelerometer data is used by step calculation logic 230 to calculate steps taken by the user.”). In sum, Defendants have failed to demonstrate that “motion” is synonymous with disclosures regarding “data.” The opinions of Defendants’ expert to the contrary are unpersuasive. (*See* Dkt. No. 55-6, Sept. 18, 2018 Medvidovic Decl. at ¶ 29.) Finally, construing “motion” as “movement” would not serve to clarify the scope of the claims but rather would merely replace one readily understandable word with another.

The Court therefore hereby expressly rejects Defendants’ proposed construction and finds that no further construction is necessary. *See U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (“Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.”); *see also O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (“[D]istrict courts are not (and should not be) required to construe every limitation present in a patent’s asserted claims.”); *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1207 (Fed. Cir. 2010) (“Unlike *O2 Micro*, where the court failed to resolve the parties’ quarrel, the district court rejected Defendants’ construction.”); *ActiveVideo Networks, Inc. v. Verizon Commcn’s, Inc.*, 694 F.3d 1312, 1326 (Fed. Cir. 2012); *Summit 6, LLC v. Samsung Elecs. Co., Ltd.*, 802 F.3d 1283, 1291 (Fed. Cir. 2015).

The Court accordingly hereby construes “**motion**” to have its **plain meaning**.

B. “vertical travel up/down portion of the step”

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning	Claims 1 & 17: “upwards/downwards vertical distance, indicated by accelerometer data, traveled during the single step” Claim 9: “upwards/downwards vertical distance, indicated by motion detection apparatus data, traveled during the single step” ¹

(Dkt. No. 45, Ex. A at 2; Dkt. No. 55 at 6; Dkt. No. 64, Ex. B at 4.) The parties submit that this term appears in Claims 1, 9, and 17. (Dkt. No. 64, Ex. B at 4.)

(1) The Parties’ Positions

Plaintiffs argue that “[t]h[is] phrase . . . do[es] not appear, on [its] face, to be indefinite, nor does the context in which [it] appear[s] seem to raise issues.” (Dkt. No. 48 at 2.) Plaintiffs also argue that “Uniloc disagrees construction is needed” and “Uniloc suggests the Court simply instruct the jury to give the term[] [its] ordinary meaning.” (*Id.* at 3.)

Defendants respond: “The fact that the claimed ‘vertical travel up/down portion of the step’ must be a quantifiable measurement (e.g., a linear distance) – and not simply an indication of the user traveling in an upward or downward direction – is confirmed by the fact that each claim requires ‘computing a difference between the vertical travel up portion and the vertical travel down portion of the step’ as part of the incline calculation.” (Dkt. No. 55 at 7.) Defendants further argue that, “because the ‘incline logic’ uses the accelerometer data to calculate the incline and because that calculation is based upon the ‘vertical travel up/down portion of the step,’ the ‘vertical travel up/down portion of the step,’ by definition, is indicated by the accelerometer data.” (*Id.* at 8.)

¹ Defendants previously asserted indefiniteness. (*See* Dkt. No. 45, Ex. A at 2.)

Finally, as to Defendants’ proposal of a “single step,” Defendants emphasize that the disputed term expressly refers to travel “of *the* step.” (*Id.* at 8.)

Plaintiffs reply that “[t]here is no ‘accelerometer’ in independent claim 9.” (Dkt. No. 62 at 1.) As to Defendants’ proposal of a “single step,” Plaintiffs reply that the specification refers to operations involving more than one step. (*Id.* at 3 (citing ’556 Patent at 3:40–54).)

(2) Analysis

Claim 1 of the ’556 Patent, for example, recites (emphasis added):

1. A step counter system comprising:
 - an accelerometer to detect motion of a user;
 - a step calculation logic to utilize the motion detected by the accelerometer to detect and count steps; and
 - an incline logic to utilize the motion detected by the accelerometer to make a calculation of an incline of a surface on which the user moved for one or more of the steps, wherein the calculation is performed for a step based on identifying a *vertical travel up portion of the step*, identifying a *vertical travel down portion of the step*, and computing a *difference between the vertical travel up portion and the vertical travel down portion of the step*.

The first recital of “steps” is plural, so the claim thus expressly contemplates that multiple steps will be counted. The subsequent recitals of “*the* step,” singular, do not confine the claim as a whole to a single step. *See Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, 512 F.3d 1338, 1343 (Fed. Cir. 2008) (“The subsequent use of definite articles ‘the’ or ‘said’ in a claim to refer back to the same claim term does not change the general plural rule, but simply reinvokes that non-singular meaning.”).

Nonetheless, the parties dispute whether the recited identification of “vertical travel up portion of the step” and “vertical travel down portion of the step” must both refer to the *same* step. The recital of “*the* step” refers to the same step in both of these disputed terms. *Cf. In re Varma*, 816 F.3d 1352, 1363 (Fed. Cir. 2016) (“For a dog owner to have ‘a dog that rolls over and fetches sticks,’ it does not suffice that he have two dogs, each able to perform just one of the tasks.”);

Harari v. Lee, 656 F.3d 1331, 1341–42 (Fed. Cir. 2011). This finding is also consistent with the recital of a “difference” between these portions of “the step.” The specification reinforces this understanding by disclosing: “A step includes three parts, a vertical travel up, a horizontal travel, and a vertical travel down.” ’556 Patent at 3:10–12.

Plaintiffs have cited disclosure that an incline can be measured or tracked across multiple steps:

In one embodiment, step calculation logic 230 outputs only a step count, rather than the step data. In one embodiment, the incline association logic 260 associates an initial incline level with the data. The incline association logic 260 then associates a delta (i.e. change in incline) with following steps. This reduces the amount of data used when the user walks on a consistent incline for a period. In another embodiment, an actual incline level is associated with each step. In another embodiment, an incline average is calculated by incline association logic 260, over an exercise period, and only the average is associated with the data. In another embodiment, a new incline is calculated and associated with the data whenever the user’s walking cadence changes. In general, users change their cadence when the road incline changes by a significant percentage.

Id. at 3:40–54. This disclosure, however, cannot serve to broaden the above-discussed explicit claim language requiring that “vertical travel up portion of the step” and “vertical travel down portion of the step” refer to a particular step. *See Renishaw*, 158 F.3d at 1248 (“The claim construction inquiry . . . begins and ends in all cases with the actual words of the claim.”); *see also Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1298 (Fed. Cir. 2014) (“[I]n all aspects of claim construction, ‘the name of the game is the claim.’”) (quoting *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998)), *abrogated on other grounds by Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015).

As to Defendants’ proposals of referring to “accelerometer data” or “motion detection apparatus data,” such limitations are addressed by other claim language. Defendants’ proposals of incorporating this language in the constructions would tend to confuse rather than clarify the

scope of the claims. Finally, Defendants have not demonstrated that the language of these disputed terms, the context in which they are used in the claims, or any disclosure in the specification warrants limiting these terms to a specific “vertical distance.”

The Court therefore hereby construes the disputed terms as set forth in the following chart:

<u>Term</u>	<u>Construction</u>
“vertical travel up portion of the step”	“upwards vertical motion during the single step”
“vertical travel down portion of the step”	“downwards vertical motion during the single step”

C. “identifying a vertical travel up portion of the step” and “identifying a vertical travel down portion of the step”

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning	“measuring a vertical travel up portion of the step” / “measuring a vertical travel down portion of the step” ²

(Dkt. No. 45, Ex. A at 1; Dkt. No. 55 at 9; Dkt. No. 64, Ex. B at 3.) The parties submit that this term appears in Claims 1, 9, and 17. (Dkt. No. 64, Ex. B at 3.)

(1) The Parties’ Positions

Plaintiffs argue that “[t]hese phrases . . . do not appear, on their face, to be indefinite, nor does the context in which they appear seem to raise issues.” (Dkt. No. 48 at 2.) Plaintiffs also argue that “Uniloc disagrees construction is needed” and “Uniloc suggests the Court simply instruct the jury to give the terms their ordinary meaning.” (*Id.* at 3.)

² Defendants previously proposed: “Indefinite (lack of written description, enablement).” (Dkt. No. 45, Ex. A at 1.)

Defendants respond that “[i]n order to ‘comput[e] a difference’ between the vertical portions of the step [as required by the claims], one would need to *measure* both the upwards vertical distance traveled and the downwards vertical distance traveled during a single step.” (Dkt. No. 55 at 9.)

Plaintiffs reply: “‘Identifying’ can be as simpl[e] as ‘spotting’ or ‘recognizing.’ On the other hand, ‘measuring’ requires additional steps, such as, ascertaining the size or degree of an identified object.” (Dkt. No. 62 at 3.)

(2) Analysis

Defendants have not sufficiently justified replacing “identifying” with “measuring,” and Defendants have not demonstrated that any recital in the claims or any disclosure in the specification warrants limiting the disputed terms to measuring a distance. The specification discloses that there are several ways to detect vertical travel, such as use of only an altimeter, use of an accelerometer, or use of both an altimeter and an accelerometer. *See* ’556 Patent at 3:24–48, 4:39–44. The opinions of Defendants’ expert to the contrary are unpersuasive. (*See* Dkt. No. 55-6, Sept. 18, 2018 Medvidovic Decl. at ¶ 35.)

The Court therefore hereby expressly rejects Defendants’ proposed construction. No further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568; *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *ActiveVideo*, 694 F.3d at 1326; *Summit 6*, 802 F.3d at 1291.

The Court accordingly hereby construes “**identifying a vertical travel up portion of the step**” and “**identifying a vertical travel down portion of the step**” to have their **plain meaning**.

D. “computing a difference between the vertical travel up portion and the vertical travel down portion of the step”

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Ordinary meaning	Claims 1 & 17: “subtracting the downwards vertical distance, indicated by accelerometer data, traveled during the single step from the upwards vertical distance, indicated by accelerometer data, traveled during the single step” Claim 9: “subtracting the downwards vertical distance, indicated by motion detection apparatus data, traveled during the single step from the upwards vertical distance, indicated by motion detection apparatus data, traveled during the single step” ³

(Dkt. No. 45, Ex. A at 3; Dkt. No. 55 at 10; Dkt. No. 64, Ex. B at 4.) The parties submit that this term appears in Claims 1, 9, and 17. (Dkt. No. 64, Ex. B at 4.)

(1) The Parties’ Positions

Plaintiffs argue that “[t]h[is] phrase . . . do[es] not appear, on [its] face, to be indefinite, nor does the context in which [it] appear[s] seem to raise issues.” (Dkt. No. 48 at 2.) Plaintiffs also argue that “Uniloc disagrees construction is needed” and “Uniloc suggests the Court simply instruct the jury to give the term[] [its] ordinary meaning.” (*Id.* at 3.)

Defendants respond that “‘computing the difference’ between two numbers means subtracting one number from the other.” (Dkt. No. 55 at 10.)

Plaintiffs reply that “‘computing’ can just mean using a computer” and “does not mean that any particular kind of math must be employed to arrive at incline.” (Dkt. No. 62 at 3.)

³ Defendants previously asserted indefiniteness. (*See* Dkt. No. 45, Ex. A at 3.)

(2) Analysis

Claim 1 of the '556 Patent, for example, recites (emphasis added):

1. A step counter system comprising:
 - an accelerometer to detect motion of a user;
 - a step calculation logic to utilize the motion detected by the accelerometer to detect and count steps; and
 - an incline logic to utilize the motion detected by the accelerometer to make a calculation of an incline of a surface on which the user moved for one or more of the steps, wherein the calculation is performed for a step based on identifying a vertical travel up portion of the step, identifying a vertical travel down portion of the step, and *computing a difference between the vertical travel up portion and the vertical travel down portion of the step.*

Defendants' expert has opined: "A person of ordinary skill in the art would understand that 'computing a difference' between two items would require 'subtracting' one from the other." (Dkt. No. 55-6, Sept. 18, 2018 Medvidovic Decl. at ¶ 35.) Yet, whereas Defendants thus conclude that the term "difference" refers to a mathematical difference, no such disclosure is apparent in the specification. *See, e.g.*, '556 Patent at Fig. 4. Likewise, the surrounding claim language, such as reproduced above, contains no indication that the patentee intended to use the specific definition of "difference" that Defendants are proposing.

The Court therefore hereby expressly rejects Defendants' proposed construction. No further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568; *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *ActiveVideo*, 694 F.3d at 1326; *Summit 6*, 802 F.3d at 1291.

The Court accordingly hereby construes **"computing a difference between the vertical travel up portion and the vertical travel down portion of the step"** to have its **plain meaning**.

E. “incline of a/the surface”

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
“difference in altitude between beginning and end of step”	“the difference between the upward vertical distance and the downward vertical distance traveled along a/the surface”

(Dkt. No. 45, Ex. A at 1; Dkt. No. 64, Ex. B at 1.) The parties submit that this term appears in Claims 1, 8–11, 18, and 19. (Dkt. No. 64, Ex. B at 1.)

In their opening brief, Plaintiffs state that “[t]he parties now agree on the above construction,” and Plaintiffs labeled the following as a “Joint Construction” of “[i]ncline of a/the surface’ on which the user moved”: “the difference between the upward vertical distance and the downward vertical distance traveled along a surface.” (Dkt. No. 48 at 3.)

In their reply brief, Plaintiffs argue that Defendants’ briefing as to other terms misapplies the agreed-upon construction. (Dkt. No. 62 at 4.) In particular, Plaintiffs argue that the agreed-upon construction does not require measuring a vertical distance or performing subtraction. (*Id.*)

Nonetheless, the parties’ Joint Claim Construction Chart filed after the close of briefing submits as “Uniloc’s Proposed Construction” the same construction that Defendants have proposed. (Dkt. No. 64, Ex. B at 1.) The parties included the following footnotes accompanying their (identical) proposed constructions:

[fn1:] In an effort to simplify the issues, Uniloc agreed to Samsung’s proposed definition for “incline of a/the surface.” Open[ing] Br. [(Dkt. No. 48) at] 3; Resp. Br. [(Dkt. No. 55) at] 11. However, Samsung then read into this construction, such that it appears Samsung believes “the difference between the upward vertical distance and the downward vertical distance traveled along a/the surface” should itself be construed to require specific measurements and subtraction to be carried on a step-by-step basis; and that identification requires measuring the vertical up/down on each step. Uniloc did not agree to these constructions of the agreed-upon construction.

[fn2:] Samsung objects to Uniloc’s improper argument in footnote 1, to the extent it is even understood.

(*Id.* at 1 nn.1–2.) At the October 16, 2018 hearing, Plaintiffs argued that a dispute remains as to this term because of how the Defendants have presented their arguments as to other terms.

Defendants responded that allowing Plaintiffs to propose a different construction would cause unfair prejudice because Defendants did not address this agreed-upon term in their responsive claim construction brief (in reliance on Plaintiffs’ unequivocal agreement as set forth in their opening claim construction brief). Defendants also submitted that the specification supports the agreed-upon construction. *See* ’556 Patent at 3:12–13 (“The difference between the vertical travel up and the vertical travel down is the incline.”).

On balance, the agreed-upon construction should be applied as agreed in Plaintiffs’ opening brief and in the Joint Claim Construction Chart. Applying this construction will avoid unfair prejudice to Defendants. Moreover, Plaintiffs’ concerns, such as that Defendants are interpreting the construction as “require[ing] specific measurements and subtraction to be carried on a step-by-step basis” (*id.* at 1 n.1), are addressed as to other terms construed in the present Claim Construction Memorandum and Order.

The Court therefore hereby construes **“incline of a/the surface”** to mean **“the difference between the upward vertical distance and the downward vertical distance traveled along [a/the] surface.”**

F. “calculation of an incline of a/the surface”

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Ordinary meaning ⁴	“subtracting downward vertical distance from upward vertical distance traveled along a/the surface”

⁴ In the parties’ October 2, 2018 Joint Claim Construction Chart, Plaintiffs propose: “Plain and ordinary meaning / Alternatively, if subject to 35 U.S.C. § 112, ¶ 6, structure is disclosed as a combination of software and hardware, or firmware, programmed with the algorithms disclosed in

(Dkt. No. 45, Ex. A at 1; Dkt. No. 55 at 11; Dkt. No. 64, Ex. B at 3.) The parties submit that this term appears in Claims 1, 8, and 9. (Dkt. No. 64, Ex. B at 3.)

(1) The Parties' Positions

Plaintiffs argue that “Uniloc disagrees construction is needed” and “Uniloc suggests the Court simply instruct the jury to give the term[] [its] ordinary meaning.” (Dkt. No. 48 at 3.)

Defendants respond that their proposed construction is supported by other claim language, by its proposed constructions as to other terms, and by the parties’ agreement as to the meaning of “incline of a/the surface” (set forth above). (Dkt. No. 55 at 11.)

Plaintiffs reply that “Uniloc did not agree that calculation of the incline requires subtraction on a step-by-step basis,” and “a computer could arrive at the incline in any number of ways, including measuring incline over a long period of time . . . or by averaging or measuring only deltas” (Dkt. No. 62 at 4 (citing ’556 Patent at 3:13–18, 3:48–50).)

(2) Analysis

This term presents substantially the same dispute as the term “computing a difference between the vertical travel up portion and the vertical travel down portion of the step,” which is addressed above. Indeed, the specification explains the desirability of using techniques to “reduce[] the amount of data used when the user walks on a consistent incline for a period.” ’556 Patent at 3:45–46. The Court therefore hereby expressly rejects Defendants’ proposed construction. No further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568; *see also*

the specification.” (Dkt. No. 64, Ex. B at 3.) This alternative proposal appears to have been inadvertent because Defendants have not proposed that this term is governed by 35 U.S.C. § 112, ¶ 6.

O2 Micro, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *ActiveVideo*, 694 F.3d at 1326; *Summit 6*, 802 F.3d at 1291.

The Court accordingly hereby construes “**calculation of an incline of a/the surface**” to have its **plain meaning**.

G. “incline data”

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning	“measurements of an incline of a surface” ⁵

(Dkt. No. 45, Ex. A at 4; Dkt. No. 55 at 12; Dkt. No. 64, Ex. B at 5.) The parties submit that this term appears in Claims 2 and 19. (Dkt. No. 64, Ex. B at 5.)

(1) The Parties’ Positions

Plaintiffs argue that “Uniloc disagrees construction is needed” and “Uniloc suggests the Court simply instruct the jury to give the term[] [its] ordinary meaning.” (Dkt. No. 48 at 3.) Plaintiffs also argue that Defendants “propose[] a circular definition.” (*Id.* at 5.)

Defendants respond that “[a]lthough there is no explicit antecedent basis for ‘*the . . . incline data*,’ the ‘incline of a surface’ that is calculated in claim 1 provides an *implicit* antecedent basis.” (Dkt. No. 55 at 12.) Defendants also submit that the specification “uses the terms ‘incline’ and ‘incline data’ interchangeably.” (*Id.*)

Plaintiffs’ reply brief does not separately address the term “incline data.” (*See* Dkt. No. 62.)

⁵ Defendants previously proposed: “data representing the calculations of an incline of a surface.” (Dkt. No. 45, Ex. A at 4.)

(2) Analysis

Defendants' proposal of "measurements" presents the same dispute as the terms "identifying a vertical travel up portion of the step" and "identifying a vertical travel down portion of the step," which are addressed above.

As to Defendants' proposal that the "incline data" is "of a surface," Claim 2 depends from Claim 1, and Claims 1 and 2 recite (emphasis added):

1. A step counter system comprising:
 - an accelerometer to detect motion of a user;
 - a step calculation logic to utilize the motion detected by the accelerometer to detect and count steps; and
 - an incline logic to utilize the motion detected by the accelerometer to make a calculation of an incline of a surface on which the user moved for one or more of the steps, wherein the calculation is performed for a step based on identifying a vertical travel up portion of the step, identifying a vertical travel down portion of the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step.
2. The step counter system of claim 1 further comprising a calorie expenditure calculator to calculate a calorie expenditure for the user based on the steps and *incline data*.

Claim 2 refers to "the steps and incline data," not "the steps and *the* incline data." The authority cited by Defendants is therefore distinguishable. *See Energizer Holdings, Inc. v. Int'l Trade Comm'n*, 435 F.3d 1366, 1371 (Fed. Cir. 2006) (holding that "an anode gel comprised of zinc as the active anode component" provided implicit antecedent basis for "*said* zinc anode") (emphasis added). Further, no implicit antecedent is present because the phrase "incline data" does not appear elsewhere in Claim 1 or Claim 2. Also, although Claim 19 (which depends from Claim 17) recites "*the* incline data," neither Claim 17 nor Claim 19 recites a "surface" as in Defendants' proposed construction. Finally, Defendants have not sufficiently supported their argument that the specification limits "incline data" to being "measurements." *See '556 Patent* at 4:45–46, Fig. 3.

The Court therefore hereby expressly rejects Defendants’ proposed construction. No further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568; *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *ActiveVideo*, 694 F.3d at 1326; *Summit 6*, 802 F.3d at 1291.

The Court accordingly hereby construes “**incline data**” to have its **plain meaning**.

H. “user step data” and “step data”

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning	“information about the steps taken by a user as determined from the accelerometer data” ⁶

(Dkt. No. 45, Ex. A at 4; Dkt. No. 55 at 12; Dkt. No. 64, Ex. B at 5.) The parties submit that this term appears in Claims 17 and 19. (Dkt. No. 64, Ex. B at 5.)

(1) The Parties’ Positions

Plaintiffs argue that “Uniloc disagrees construction is needed” and “Uniloc suggests the Court simply instruct the jury to give the term[] [its] ordinary meaning.” (Dkt. No. 48 at 3.)

Defendants respond that “the claim language requires that the ‘user step data’ is ‘determined from the accelerometer data,’” “the only source for the ‘step data’ disclosed in the specification is the step calculation logic,” and “accelerometer data is the only disclosed input to the step calculation logic.” (Dkt. No. 55 at 13.)

Plaintiffs’ reply brief does not separately address “user step data” or “step data.” (*See* Dkt. No. 62.)

(2) Analysis

Claims 17 and 19 recite (emphasis added):

⁶ Defendants previously proposed: “information about the steps taken by a user as determined by the accelerometer.” (Dkt. No. 45, Ex. A at 4.)

17. A method comprising:
receiving data from an accelerometer, the data indicating a motion of a user in three dimensions;
calculating, by a mobile device, *user step data* based on the accelerometer data; and
calculating an incline by the mobile device, and associating the incline with *the step data*, wherein for one of more of the steps the incline is calculated by identifying a vertical travel up portion of the step, identifying a vertical travel down portion of the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step.

* * *

19. The method of claim 17, further comprising:
calculating a calorie expenditure for the user based on *the step data* and the incline data.

As a threshold matter, the recitals of “the step data” in Claims 17 and 19 refer back to the recital of “user step data” in Claim 17. *See Energizer*, 435 F.3d at 1371. The term “step data” therefore carries the same meaning as “user step data.” Further, the term “user step data” refers back to the recital of “a user” in the preceding limitation of “receiving data from an accelerometer, the data indicating a motion of a user in three dimensions.”

As to Defendants’ proposed construction, Claim 17 already expressly recites that the “user step data” is “based on the accelerometer data.” Defendants’ proposal of referring to accelerometer data in the construction is unnecessary and would tend to confuse rather than clarify the scope of the claims.

Also, the specification uses the word “data” extensively but uses the word “information” only once. *See* ’556 Patent at 3:24–27 (“The altimeter’s output indicates the change in altitude. This information is used, in one embodiment, by incline logic 240 to determine the incline.”). Defendants have not sufficiently justified replacing the word “data” with “information.”

Nonetheless, Defendants have shown that the specification distinguishes between “step data” and “step count”: “In one embodiment, step calculation logic 230 outputs only a step count,

rather than the step data.” *Id.* at 3:40–41. Thus, step data is not merely a count of steps but rather is data about the steps. At the October 16, 2018 hearing, Plaintiff agreed that “step data” is not synonymous with step count.

The Court therefore hereby construes **“user step data”** and **“step data”** to mean **“data about steps taken by the user.”**

I. “step calculation logic to utilize the motion detected by the accelerometer to detect and count steps”

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
<p>Plain and ordinary meaning</p> <p>Alternatively, if subject to 35 U.S.C. § 112, ¶ 6, structure is disclosed as a combination of software and hardware, or firmware, programmed with the algorithms disclosed in the specification.</p>	<p>Subject to 35 U.S.C. § 112, ¶ 6</p> <p>Function: “to utilize the motion detected by the accelerometer to detect and count steps”</p> <p>Structure: Not disclosed, and therefore indefinite under § 112, ¶ 2</p>

(Dkt. No. 45, Ex. A at 1; Dkt. No. 55 at 16; Dkt. No. 64, Ex. B at 1.) The parties submit that this term appears in Claim 1. (Dkt. No. 64, Ex. B at 1.)

(1) The Parties’ Positions

Plaintiffs argue that “[t]h[is] phrase[] . . . do[es] not appear, on [its] face, to be indefinite, nor does the context in which [it] appear[s] seem to raise issues.” (Dkt. No. 48 at 2.)

Defendants respond that the presumption against means-plus-function treatment is overcome “[b]ecause the claim fails to recite sufficient structure to perform this function.” (Dkt. No. 55 at 17.) Defendants further argue that “[t]he ’556 specification uses the term ‘step calculation logic’ five times, but not once does it provide any structure that would perform the recited function” (*Id.* at 20.)

Plaintiffs reply that the presumption against means-plus-function treatment is not rebutted because the term is not in traditional means-plus-function format and because the term “use[s] a well-known word in computer science—‘logic,’ i.e., programming logic—that denotes computer structure, including hardware or firmware.” (Dkt. No. 62 at 6.)

(2) Analysis

Title 35 U.S.C. § 112, ¶ 6 provides: “An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.”

“[T]he failure to use the word ‘means’ . . . creates a rebuttable presumption . . . that § 112, para. 6 does not apply.” *Williamson*, 792 F.3d at 1348 (citations and internal quotation marks omitted). “When a claim term lacks the word ‘means,’ the presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function.” *Id.* at 1349 (citations and internal quotation marks omitted).

Williamson, in an *en banc* portion of the decision, abrogated prior statements that the absence of the word “means” gives rise to a “strong” presumption against means-plus-function treatment. *Id.* (citation omitted). *Williamson* also abrogated prior statements that this presumption “is not readily overcome” and that this presumption cannot be overcome “without a showing that the limitation essentially is devoid of anything that can be construed as structure.” *Id.* (citations omitted). Instead, *Williamson* found, “[h]enceforth, we will apply the presumption as we have done prior to *Lighting World*” *Id.* (citing *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1358 (Fed. Cir. 2004)). In a subsequent part of the decision not considered *en*

banc, *Williamson* affirmed the district court’s finding that the term “distributed learning control module” was a means-plus-function term that was indefinite because of lack of corresponding structure, and in doing so *Williamson* stated that “‘module’ is a well-known nonce word.” *Id.* at 1350.

Defendants have argued that Plaintiffs waived any argument that this disputed term is not a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6 because Plaintiffs did not present any such arguments in their opening claim construction brief. Because Plaintiffs proposed “[o]rdinary meaning” in the parties’ July 24, 2018 Joint Claim Construction and Prehearing Statement, and because this disputed term does not use the word “means” and is therefore presumed *not* to be governed by 35 U.S.C. § 112, ¶ 6 (*see id.* at 1349), the Court rejects Defendants’ waiver argument.

Here, Claim 1 of the ’556 Patent recites (emphasis added):

1. A step counter system comprising:
 - an accelerometer to detect motion of a user;
 - a *step calculation logic to utilize the motion detected by the accelerometer to detect and count steps*; and
 - an incline logic to utilize the motion detected by the accelerometer to make a calculation of an incline of a surface on which the user moved for one or more of the steps, wherein the calculation is performed for a step based on identifying a vertical travel up portion of the step, identifying a vertical travel down portion of the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step.

Plaintiffs have cited *TecSec, Inc. v. IBM Corp.*, 731 F.3d 1336 (Fed. Cir. 2013), which found that “digital logic means” was not a means-plus-function term. In particular, *TecSec* found that “the term ‘digital logic’ designates structure to skilled artisans—namely digital circuits that perform Boolean algebra.” *See id.* at 1348. As noted in *Williamson*, “the presence of modifiers” can be significant in evaluating whether 35 U.S.C. § 112, ¶ 6 applies. 792 F.3d at 1351.

Here, Plaintiffs have not shown that “step calculation logic” connotes any structural meaning. Rather, this phrase is merely functional. *See Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014) (“The question is whether the claim language names particular structures or, instead, refers only to a general category of whatever may perform specified functions.”).

TecSec is further distinguishable because, in *TecSec*, “the claims d[id] not recite a function for the digital logic means to perform,” and the digital logic means was recited as being comprised of several structural components. 731 F.3d at 1348. Here, the “step calculation logic” is recited as “to utilize the motion detected by the accelerometer to detect and count steps,” and Plaintiffs have failed to demonstrate that this language connotes any structure. Although the function performed by the step calculation logic involves the accelerometer, the accelerometer is not part of the step calculation logic itself. Plaintiff’s reliance on “inputs and outputs” is unavailing. *See Williamson*, 792 F.3d at 1351 (“While portions of the claim do describe certain inputs and outputs at a very high level (e.g., communications between the presenter and audience member computer systems), the claim does not describe how the ‘distributed learning control module’ interacts with other components in the distributed learning control server in a way that might inform the structural character of the limitation-in-question or otherwise impart structure to the ‘distributed learning control module’ as recited in the claim.”).

Plaintiffs have also cited *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580 (Fed. Cir. 1996), which found that the term “detent mechanism defining the conjoint rotation of said shafts in predetermined intervals” was not a means-plus-function term. *Id.* at 1584. *Greenberg* is distinguishable, however, because the court found that “the noun ‘detent’ denotes a type of device with a generally understood meaning in the mechanical arts.” *Id.* at 1583. Even accepting

Plaintiffs’ argument that “logic” refers to a combination of computer hardware and software, this does not amount to sufficient structure for purposes of avoiding application of 35 U.S.C. § 112, ¶ 6. *See Williamson*, 792 F.3d at 1350 (“‘Module’ is a well-known nonce word that can operate as a substitute for ‘means’ in the context of § 112, para. 6. As the district court found, ‘module’ is simply a generic description for software or hardware that performs a specified function.”) (citation and internal quotation marks omitted).

Finally, Plaintiffs’ reliance on *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364 (Fed. Cir. 2003), which found that a “programmed logic circuit” term was not a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6, is similarly unavailing. *Id.* at 1373. *Apex* found that the phrase “programmed logic,” when *coupled with* the word “circuit,” had structural meaning. *Id.* (“[T]he term ‘circuit’ with an appropriate identifier such as ‘interface,’ ‘programming’ and ‘logic,’ certainly identifies some structural meaning to one of ordinary skill in the art”). No such structural word is present in the term “step calculation logic.” *Apex* is therefore distinguishable.

Thus, Defendants have overcome the presumption against means-plus-function treatment, and the Court finds that “step calculation logic to utilize the motion detected by the accelerometer to detect and count steps” is a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6. The parties have not presented any dispute as to the claimed function, which is “to utilize the motion detected by the accelerometer to detect and count steps.” The remaining dispute, then, is whether the specification discloses sufficient corresponding structure.

Plaintiffs’ briefing contains only one relevant passage, as follows:

The specification of the ’556 Patent discloses detailed sequences of steps for performing the logic functions cited above. *See, e.g.*, ’556 Patent at 2:44–3:8 (step calculation logic); *id.* at 3:9–54 (incline logic); *id.* at 4:57–5:4 (caloric energy calculation logic); *see also* Figs. 2–4.[fn4] The calculations can be performed on a server, over a network, and/or on a mobile device. *Id.* at 2:4–65. Thus, even if

construed under § 112(6), the claims are not indefinite. *See Typhoon Touch [Techs., Inc. v. Dell, Inc.]*, 659 F.3d [1376,] 1385–86 [(Fed. Cir. 2011)].[fn5]

[fn4: As for hardware, in addition to the accelerometer and step counter, the specification discloses, inter alia, a “central server” and a “general health server designed to collect, correlate, and share health data from multiple monitors, sensors, and devices. The step counter is one such device, which may also include a heart monitor, glucose meter, blood pressure monitor, and others.” ’556 Patent at 2:14–20.]

[fn5: Samsung cites to excerpts from inventor’s deposition in support of its indefiniteness argument. *See* Resp. Br. [(Dkt. No. 55)] at 21, 26–27, 30. The inventor’s testimony is irrelevant. . . .]

(Dkt. No. 62 at 9.)

Plaintiffs thus assert that the specification sets forth “detailed sequences of steps.” *Id.* As a general matter, “[p]recedent and practice permit a patentee to express [a] procedural algorithm in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure.” *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1385 (Fed. Cir. 2011).

The portion of the specification cited by Plaintiffs discloses:

In one embodiment, the step counter 110 may be any mobile device including an accelerometer, which is capable of collecting accelerometer data, and either performing calculations, transmitting accelerometer data to the central server 120, or both. The central server 120 may perform all of the calculations. In one embodiment, the data may be stored on a remote storage medium 140, which may be a database or other storage medium. In one embodiment, the remote storage medium 140 may be part of the server 120. In one embodiment, the remote storage medium may be a distributed storage.

In another embodiment, the step counter 110 may be a dedicated device designed to perform step calculations and incline calculations. In one embodiment, the step counter 110 may be independent of the central server 120. In one embodiment, if that is the case, the user may separately connect to the central server 120 via computer system 150, to transfer the step counter data manually.

FIG. 2 is a block diagram of one embodiment of the step counter system. The step counter system 200’s functionality may be distributed between a server and a client. The step counter system 200 in one embodiment includes an accelerometer 210. In

another embodiment, the accelerometer 210 may be external to the system, with only accelerometer data being received by the system from the external accelerometer 210.

The accelerometer data is in one embodiment sent to buffer 220. The accelerometer data is used by step calculation logic 230 to calculate steps taken by the user. In one embodiment, the calculation system described in co-owned application Ser. No. 11/192,549 is used by step calculation logic 230.

'556 Patent at 2:44–3:8; *see id.* at 3:40–41 (“In one embodiment, step calculation logic 230 outputs only a step count, rather than the step data.”).

None of this disclosure cited by Plaintiffs sets forth any sequence of steps for utilizing the motion detected by the accelerometer to detect and count steps. Disclosures that merely repeat the claimed function, such as the disclosure of “step counter 110,” are insufficient. *See, e.g., Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1317 (Fed. Cir. 2012) (“[P]urely functional language, which simply restates the function associated with the means-plus-function limitation, is insufficient to provide the required corresponding structure”). Disclosure and illustration of “step calculation logic 230” is likewise insufficient. *See Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1383 (Fed. Cir. 2009).⁷ This lack of corresponding structure results in indefiniteness. *See, e.g., Noah*, 675 F.3d at 1312.

⁷ One portion of the disclosure cited by Plaintiff refers to another patent application. Typically, “material incorporated by reference cannot provide the corresponding structure necessary to satisfy the definiteness requirement for a means-plus-function clause.” *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1301 (Fed. Cir. 2005). The case of *Otto Bock HealthCare LP v. Ossur HF*, however, discusses “using a U.S. patent application incorporated by reference to define structure for the purpose of 35 U.S.C. § 112, ¶ 6.” 557 F. App’x 950, 955–56 (Fed. Cir. Feb. 18, 2014) (“In fact, 37 C.F.R. 1.57(d) specifically envisions using a U.S. patent application incorporated by reference to define structure for the purpose of 35 U.S.C. § 112, ¶ 6.”). The specification discloses that “step calculation logic 230” can use a “calculation system” to perform the function of calculating steps taken by a user, and the specification refers to the calculation system disclosed in “co-owned application Ser. No. 11/192,549.” ’556 Patent at 3:5–8. That “co-owned application” issued as United States Patent No. 7,839,279 (“the ’279 Patent”). But whereas Plaintiffs have cited the disclosure that refers to the ’279 Patent, Plaintiffs did not

The Court therefore hereby finds that **“step calculation logic to utilize the motion detected by the accelerometer to detect and count steps”** is a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6, and the claimed function is **“to utilize the motion detected by the accelerometer to detect and count steps,”** but that the lack of corresponding structure renders the term **indefinite**.

J. “incline logic to utilize the motion detected by the accelerometer/motion detection apparatus to make a calculation of an incline of a/the surface” and “the incline logic to utilize the change in altitude to make an additional calculation of the incline of the surface, and to verify the calculation of the incline using the additional calculation of the incline”

“incline logic to utilize the motion detected by the accelerometer/motion detection apparatus to make a calculation of an incline of a/the surface” (Claims 1, 9)	
Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
<p>Plain and ordinary meaning</p> <p>Alternatively, if subject to 35 U.S.C. § 112, ¶ 6, structure is disclosed as a combination of software and hardware, or firmware, programmed with the algorithms disclosed in the specification.</p>	<p>Subject to 35 U.S.C. § 112, ¶ 6.</p> <p>Function: “to utilize the motion detected by the accelerometer/motion detection apparatus to make a calculation of an incline of a/the surface”</p> <p>Structure: Not disclosed, and therefore indefinite under § 112, ¶ 2</p>

address the ’279 Patent in their briefing or at the October 16, 2018 claim construction hearing. Plaintiff thus has not identified any relevant disclosure in the ’279 Patent, and the Court finds none.

“the incline logic to utilize the change in altitude to make an additional calculation of the incline of the surface, and to verify the calculation of the incline using the additional calculation of the incline” (Claims 8, 11)	
Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
“second calculation of difference in altitude between beginning and end of step”	<p>Subject to 35 U.S.C. § 112, ¶ 6.</p> <p>Function: “to utilize the change in altitude to make an additional calculation of the incline of the surface, and to verify the calculation of the incline using the additional calculation of the incline”</p> <p>Structure: Not disclosed, and therefore indefinite under § 112, ¶ 2</p>

(Dkt. No. 45, Ex. A at 1; Dkt. No. 55 at 21–23; Dkt. No. 64, Ex. B at 2.)

(1) The Parties’ Positions

Plaintiffs argue as to “incline logic to utilize the motion . . .” that “[t]h[is] phrase[] . . . do[es] not appear, on [its] face, to be indefinite, nor does the context in which [it] appear[s] seem to raise issues.” (Dkt. No. 48 at 2.) As to “incline logic to utilize the change in altitude to make an additional calculation of the incline of the surface,” Plaintiffs argue that “Uniloc would define the ‘additional calculation’ claim 8 refers to as a second calculation, which would seem to be the ordinary meaning of ‘additional calculation.’” (*Id.* at 3.)

Defendants respond that these are means-plus-function terms because the claims do not describe sufficient structure for the “incline logic” that would perform the functions. (Dkt. No. 55 at 22, 23.) Defendants further argue that the specification contains no corresponding structure. (*See id.* at 22–24.) Alternatively, Defendants argue that Plaintiffs’ proposed interpretation is

inconsistent with the intrinsic evidence and with Plaintiffs' prior statements to the Court in the present case. (*Id.* at 24–25.)

Plaintiffs reply as to these terms together with the “step calculation logic . . .” term addressed above. (*See* Dkt. No. 62 at 6–9.)

(2) Analysis

Legal principles regarding 35 U.S.C. § 112, ¶ 6 are set forth regarding the term “step calculation logic to utilize the motion detected by the accelerometer to detect and count steps,” above. Of particular note, Defendants have the burden to rebut the presumption that 35 U.S.C. § 112, ¶ 6 does not apply to these terms. For the same reasons discussed above as to the “step calculation logic . . .” term, the Court finds that Plaintiffs have not waived argument that 35 U.S.C. § 112, ¶ 6 does not apply.

Defendants argue that the presumption against means-plus-function treatment is rebutted. If the presumption were rebutted and 35 U.S.C. § 112, ¶ 6 were applied, the parties appear to agree that the algorithm requirement would apply: “In a means-plus-function claim in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.” *WMS Gaming Inc. v. Int’l Gaming Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999).

Claims 1 and 9 recite (emphasis added):

1. A step counter system comprising:
 - an accelerometer to detect motion of a user;
 - a step calculation logic to utilize the motion detected by the accelerometer to detect and count steps; and
 - an incline logic to utilize the motion detected by the accelerometer to make a calculation of an incline of a surface on which the user moved for one or more of the steps, wherein the calculation is performed for a step based on identifying a vertical travel up portion of the step, identifying a vertical travel down portion of*

the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step.

* * *

9. A system comprising:

a motion detection apparatus to detect three dimensional motion of a user on a surface;

an incline logic to utilize the motion detected by the motion detection apparatus to make a calculation of an incline of the surface to associate with user steps, wherein the calculation is performed for one or more of the user steps based on identifying a vertical travel up portion of the step, identifying a vertical travel down portion of the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step; and

an energy calculation logic to calculate a calorie expenditure of the user, based on the three dimensional motion of the user, wherein the energy calculation logic takes into account the incline of the surface.

Thus, the *claims themselves* set forth algorithms, such that the claims “recit[e] sufficient structure for performing th[e] function[s].” *Williamson*, 792 F.3d at 1349 (citation and internal quotation marks omitted). Defendants argue that “this algorithm is insufficient to perform the recited function as it does not explain *how* the ‘incline logic’ uses ‘the motion detected by the accelerometer’ (as required by claim 1) or ‘the motion detected by the motion detection apparatus’ (as required by claim 9) to identify either the vertical travel up portion of the step or the vertical travel down portion of the step.” (Dkt. No. 55 at 22.) Yet, the claims recite identifying vertical travel as part of calculating an incline, and “the sufficiency of the disclosure of algorithmic structure must be judged in light of what one of ordinary skill in the art would understand the disclosure to impart.” *Aristocrat Techs. Australia Pty Ltd. v. Int’l Game Tech.*, 521 F.3d 1328, 1337 (Fed. Cir. 2008). Defendants’ argument perhaps may bear upon enablement or written description requirements, as to which Defendants state they intend to file a motion for summary judgment (*see* Dkt. No. 55 at 9 n.8), but Defendants have failed to demonstrate any deficiency here

as a matter of claim construction. The Court accordingly finds that 35 U.S.C. § 112, ¶ 6 does not apply.

As to the proper construction for the disputed term in Claims 1 and 9, Defendants submit that if the Court finds that 35 U.S.C. § 112, ¶ 6 does not apply to these terms, then “Samsung proposes that they need no construction.” (*Id.* at 29 n.13.) The parties are thus in agreement in this regard.

Dependent Claims 8 and 11 recite (emphasis added):

8. The step counter system of claim 1, further comprising:
an altimeter to determine a change in altitude;
the incline logic to utilize the change in altitude to make an additional calculation of the incline of the surface, and to verify the calculation of the incline using the additional calculation of the incline.

* * *

11. The system of claim 9, the system further comprising:
an altimeter to determine a change in altitude;
the incline logic to utilize the change in altitude to make an additional calculation of the incline of the surface and to verify the calculation of the incline using the additional calculation of the incline.

Unlike the above-discussed “incline logic . . .” term in Claims 1 and 9, this term in Claims 8 and 11 is not accompanied by any algorithm, and the recitals of “mak[ing] an additional calculation of the incline” and “verifying the calculation of the incline” do not otherwise impart structure to the disputed term.

In light of this, the presumption against means-plus-function treatment has been rebutted, and the Court finds that “the incline logic to utilize the change in altitude to make an additional calculation of the incline of the surface, and to verify the calculation of the incline using the additional calculation of the incline” in Claims 8 and 11 is a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6. The parties have not presented any dispute as to the claimed function,

which is “to utilize the change in altitude to make an additional calculation of the incline of the surface, and to verify the calculation of the incline using the additional calculation of the incline.”

The remaining dispute, then, is whether the specification discloses sufficient corresponding structure.

Plaintiffs have cited the following disclosure in the specification:

The accelerometer data is further used by incline logic 240, to determine an incline associated with a step. A step includes three parts, a vertical travel up, a horizontal travel, and a vertical travel down. The difference between the vertical travel up and the vertical travel down is the incline. In one embodiment, the incline logic 240 calculates the incline for each step. In one embodiment, the system includes an incline averaging buffer 250, to enable the calculation of an averaged incline. In one embodiment, the system averages the incline over a period of several steps.

In one embodiment, the system may further include an altimeter 255, or pressure sensor. In one embodiment, the altimeter 255 may be calibrated using network triangulation for a mobile phone based step counter system 200. In one embodiment, if global positioning system (GPS) data is available, it may be used to calibrate the altimeter. *The altimeter’s output indicates the change in altitude. This information is used, in one embodiment, by incline logic 240 to determine the incline. In one embodiment, the data from the altimeter 255 and accelerometer 210 are used in combination to get a more accurate measurement of the slope. The combination provides an accurate measurement of the incline. Knowing that an object is moving and quantifying how it is moving helps in determining whether pressure changes sensed by the altimeter 255 are due to changes in altitude or weather.* Furthermore, changes in pressure as detected by the altimeter 255, while a device is in motion, will help more accurately describe the motion of the object and, specifically, the change in altitude.

Incline association logic 260 adds the incline data to each step data. In one embodiment, step calculation logic 230 outputs only a step count, rather than the step data. In one embodiment, the incline association logic 260 associates an initial incline level with the data. The incline association logic 260 then associates a delta (i.e. change in incline) with following steps. This reduces the amount of data used when the user walks on a consistent incline for a period. In another embodiment, an actual incline level is associated with each step. In another embodiment, an incline average is calculated by incline association logic 260, over an exercise period, and only the average is associated with the data. In another embodiment, a new incline is calculated and associated with the data whenever the user’s walking cadence changes. In general, users change their cadence when the road incline changes by a significant percentage.

'556 Patent at 3:9–54 (emphasis added).

Nothing in this disclosure sets forth any sequence of steps for utilizing the change in altitude to make an additional calculation of the incline of the surface or verifying the calculation of the incline using the additional calculation of the incline. *See, e.g., Noah*, 675 F.3d at 1317 (“[P]urely functional language, which simply restates the function associated with the means-plus-function limitation, is insufficient to provide the required corresponding structure”). Disclosures and illustrations of “incline logic 240” are likewise insufficient. *See Blackboard*, 574 F.3d at 1383. The disputed “incline logic . . .” term in Claims 8 and 11 thus lacks corresponding structure. This lack of corresponding structure results in indefiniteness. *See, e.g., Noah*, 675 F.3d at 1312.

The Court accordingly hereby construes the disputed terms as set forth in the following chart:

<u>Term</u>	<u>Construction</u>
“incline logic to utilize the motion detected by the accelerometer/motion detection apparatus to make a calculation of an incline of a/the surface” (Claims 1, 9)	Plain meaning (Not governed by 35 U.S.C. § 112, ¶ 6)
“the incline logic to utilize the change in altitude to make an additional calculation of the incline of the surface, and to verify the calculation of the incline using the additional calculation of the incline” (Claims 8, 11)	Means-plus-function term governed by 35 U.S.C. § 112, ¶ 6 Function: “to utilize the change in altitude to make an additional calculation of the incline of the surface, and to verify the calculation of the incline using the additional calculation of the incline” Corresponding Structure: None (indefinite)

K. “energy calculation logic to calculate a calorie expenditure of the user”

Plaintiffs’ Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning Alternatively, if subject to 35 U.S.C. § 112, ¶ 6, structure is disclosed as a combination of software and hardware, or firmware, programmed with the algorithms disclosed in the specification.	Subject to 35 U.S.C. § 112, ¶ 6. Function: “to calculate a calorie expenditure of the user” Structure: Not disclosed, and therefore indefinite under § 112, ¶ 2

(Dkt. No. 45, Ex. A at 4; Dkt. No. 55 at 29; Dkt. No. 64, Ex. B at 5.) The parties submit that this term appears in Claim 9. (Dkt. No. 64, Ex. B at 5.)

(1) The Parties’ Positions

Plaintiffs argue that “[t]h[is] phrase . . . do[es] not appear, on [its] face, to be indefinite, nor does the context in which [it] appear[s] seem to raise issues.” (Dkt. No. 48 at 2.)

Defendants respond that the claim fails to provide any structure for performing the recited function. (Dkt. No. 55 at 29.) Defendants further argue that “[a]lthough the specification provides that the alleged invention can include a ‘calorie expenditure calculator,’ there is no description of the structure of such a calculator.” (*Id.* at 30.)

Plaintiffs reply as to these terms together with the “step calculation logic . . .” term addressed above. (*See* Dkt. No. 62 at 6–9.)

(2) Analysis

Claim 9 recites (emphasis added):

9. A system comprising:
 - a motion detection apparatus to detect three dimensional motion of a user on a surface;
 - an incline logic to utilize the motion detected by the motion detection apparatus to make a calculation of an incline of the surface to associate with user steps, wherein the calculation is performed for one or more of the user steps based

on identifying a vertical travel up portion of the step, identifying a vertical travel down portion of the step, and computing a difference between the vertical travel up portion and the vertical travel down portion of the step; and
an *energy calculation logic to calculate a calorie expenditure of the user*, based on the three dimensional motion of the user, wherein the energy calculation logic takes into account the incline of the surface.

Legal principles regarding 35 U.S.C. § 112, ¶ 6 are set forth regarding the term “step calculation logic to utilize the motion detected by the accelerometer to detect and count steps,” above,⁸ and substantially the same analysis applies here. In particular, Plaintiffs have failed to demonstrate that “energy calculation logic” connotes any structural meaning. Also, the recitals of what this calculation is “based on” and “takes into account” do not amount to an algorithm and do not impart structure to the disputed term.

Based on the foregoing, the presumption against means-plus-function treatment has been rebutted, and the Court finds that “energy calculation logic” is a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6. Plaintiffs have not opposed Defendants’ proposal that the claimed function is “to calculate a calorie expenditure of the user.” The remaining dispute, then, is whether the specification discloses sufficient corresponding structure.

The specification discloses:

In one embodiment, the communication from the central server 120 to the step counter 110 includes personal data of the user, which may be used by the step counter 110 to *calculate calorie expenditure* of the user.

* * *

In one embodiment, *calorie expenditure calculator 270* calculates a user’s calorie expenditure based on the step and associated incline data. In one embodiment, the *calorie expenditure calculator 270* utilizes personal data of the user to calculate the calories expended. The personal data may include one or more of the following: the user’s height, the user’s weight, the user’s heart rate, and the user’s stride length.

⁸ For the same reasons discussed above as to the “step calculation logic . . .” term, the Court finds that Plaintiffs have not waived argument that this term is not a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6.

* * *

At block 380, in one embodiment, a *calorie expenditure calculation* is performed for the user, based on the step data, incline data, and in one embodiment the user's personal data such as weight, height and stride length. In another embodiment, this step may be skipped. In another embodiment, this may happen at a separate time, in an off-line setting.

At block 390, in one embodiment, a graphical illustration of the user's progress, including the incline data, is created. In another embodiment, this may happen at a separate time, in an off-line setting. In another embodiment, this step may be skipped.

The process then ends at block 395. In this way, the system utilizes the accelerometer data to provide data about the incline, and the corresponding change in calorie expenditure to the user.

'556 Patent at 2:28–31, 3:55–62, 4:57–5:4 (emphasis added).

None of these disclosures sets forth any sequence of steps for calculating a calorie expenditure of the user, and disclosures that merely repeat the claimed function are insufficient. *See, e.g., Noah*, 675 F.3d at 1317 (“[P]urely functional language, which simply restates the function associated with the means-plus-function limitation, is insufficient to provide the required corresponding structure”). Disclosures and illustrations of “calorie expenditure calculator 270” and “block 380” are likewise insufficient. *See Blackboard*, 574 F.3d at 1383. Finally, Figure 4 of the '556 Patent illustrates “kcal” amounts associated with particular groups of steps, but this Figure provides no indication of how such energy amounts are calculated. This lack of corresponding structure results in indefiniteness. *See, e.g., Noah*, 675 F.3d at 1312.

The Court therefore hereby finds that **“energy calculation logic to calculate a calorie expenditure of the user”** is a means-plus-function term governed by 35 U.S.C. § 112, ¶ 6, and the claimed function is **“to calculate a calorie expenditure of the user,”** but that the lack of corresponding structure renders the term **indefinite**.


V. CONCLUSION

The Court **ADOPTS** and **ORDERS** the constructions set forth in this opinion for the disputed terms of the patent-in-suit, and in reaching conclusions the Court has considered extrinsic evidence. The Court's constructions thus include subsidiary findings of fact based upon the extrinsic evidence presented by the parties in these claim construction proceedings. *See Teva*, 135 S. Ct. at 841.

The parties are **ORDERED** that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

Within thirty (30) days of the issuance of this Memorandum Opinion and Order, the parties are hereby **ORDERED**, in good faith, to mediate this case with the mediator agreed upon by the parties. As a part of such mediation, each party shall appear by counsel (with lead and local counsel present and participating) and by at least one corporate officer possessing sufficient authority and control to unilaterally make binding decisions for the corporation adequate to address any good faith offer or counteroffer of settlement that might arise during such mediation. Failure to do so shall be deemed by the Court as a failure to mediate in good faith and may subject that party to such sanctions as the Court deems appropriate. No participant shall leave the mediation without the approval of the mediator.

So ORDERED and SIGNED this 24th day of October, 2018.



RODNEY GILSTRAP
UNITED STATES DISTRICT JUDGE